A. CLASSIFICATION OF SUBJECT MATTER IPC 7 F16B39/24 F16B43/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F16B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

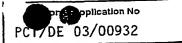
Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUM	ENTS CONSIDERED TO BE RELEVANT	
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Χ	US 3 332 464 A (LOUIS CASTEL GERARD ANTOINE) 25 July 1967 (1967-07-25)	1-4
Υ	column 3, line 51 -column 4, line 40; figures 1-3 column 4, line 61 - line 75; figures 6,7	5–7
X	DE 11 29 779 B (ADOLF SCHNORR K G) 17 May 1962 (1962-05-17)	1,2,5
Υ	column 3, line 39 -column 4, line 2; figures 1,2	5-7
X	US 302 441 A (FRANK F STEVENS) 22 July 1884 (1884-07-22) page 1, line 28 - line 72; figures 1-3	1,5
X	US 3 390 713 A (GUTSHALL CHARLES E) 2 July 1968 (1968-07-02) column 2, line 10 - line 59; figures 1,3,4	1

Further documents are listed in the continuation of box C.	Patent family members are listed in annex.
Special categories of cited documents: A* document defining the general state of the art which is not considered to be of particular relevance E* earlier document but published on or after the international filing date L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) O* document referring to an oral disclosure, use, exhibition or other means P* document published prior to the international filing date but later than the priority date claimed	 "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family
Date of the actual completion of the international search	Date of mailing of the international search report
25 June 2003	04/07/2003
Name and mailing address of the ISA	Authorized officer -
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Heinzler-Rödl, M





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1	EP 0 426 895 B (BAUER & SCHAURTE KARCHER GMBH) 18 August 1993 (1993-08-18) cited in the application column 2, line 29 -column 3, line 35; figure 1	1-7		
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